

### Scope of Claim

[1] A vacuum thermal insulating valve characterized by that, with the  
5 vacuum thermal insulating valve formed by a valve equipped with a valve body  
and an actuator, and a vacuum thermal insulating box which houses said valve,  
the afore-mentioned vacuum thermal insulating box comprises a square-shaped  
lower vacuum jacket equipped with a cylinder-shaped vacuum thermal insulating  
pipe receiving part on its side and also with an upper face which is made open  
10 and a square-shaped upper vacuum jacket hermetically fitted to said lower  
vacuum jacket from the above and also with a lower face which is made open:  
and the jointed part is formed by bending the inner wall and the outer wall of the  
upper end of the afore-mentioned lower vacuum jacket toward the inside in the  
shape of a brim, and also the jointed part is formed by bending the center part of  
15 the height direction of the side of said lower vacuum jacket toward the outside in  
the shape of a brim, and further the jointed part is formed by bending the inner  
wall and the outer wall of the lower end of the afore-mentioned upper vacuum  
jacket toward the outside in the shape of a brim, and both are combined in the  
manner that the vacuum thermal insulating side wall of the upper vacuum jacket  
20 is positioned toward the vacuum thermal insulating side wall of the  
afore-mentioned lower vacuum jacket, to make the jointed part of the lower end  
of the afore-mentioned upper vacuum jacket and the jointed part of the outer wall  
side of the lower vacuum jacket hermetically contacted by installing a thermal  
insulating material layer, and also make the jointed part of the inner wall of the

ceiling part of the upper vacuum jacket and the upper end of the lower vacuum jacket hermetically contacted by installing a thermal insulating material layer.

[2] A vacuum thermal insulating valve as claimed in Claim 1 is so made that a valve is equipped with a valve unit body made by a plural number of valve  
5 bodies being integrally connected.

[3] A vacuum thermal insulating valve as claimed in Claim 1 is so made that a heater is mounted on a valve body and said heater is made to be a plane heater faxed to the valve body.

[4] A vacuum thermal insulating valve as claimed in Claim 1 is so  
10 constituted that a valve body to which outer surface a plane heater is fixed and with which inner part a valve seat and a valve seat part are equipped.

[5] A vacuum thermal insulating valve as claimed in Claim 1 is so made that a thermal insulating material layer is of a silicon sponge.

[6] A vacuum thermal insulating valve as claimed in Claim 1 is so made that  
15 the outer wall of the upper vacuum jacket is 2mm thick and its inner wall is 1.5mm thick, and the inner wall of the lower vacuum jacket is 2mm thick and the lower part of its outer wall is 2mm thick and the upper part of the side wall of the outer wall is 1.5mm thick, and they are made of stainless steel.

[7] A vacuum thermal insulating valve as claimed in Claim 1 is so  
20 constituted that a vacuum thermal insulating pipe receiving part installed on the side of the lower vacuum jacket is made to be a 50mm to 150mm long cylinder-shaped vacuum jacket made of a 2mm thick stainless steel plate, and O-rings made of the thermal insulating material are placed on the peripheral face of one end or both ends of the tip part of the vacuum thermal insulating pipe to

be inserted into said vacuum thermal insulating pipe receiving part from the outside, and the afore-mentioned O-rings made of the thermal insulating material are caught between the vacuum thermal insulating pipe receiving part and the tip part thereof.

5 [8] A vacuum thermal insulating valve as claimed in Claim 1 is so constituted that the jointed parts in the shape of a brim of the side walls of the upper and lower vacuum jackets combined in an opposite direction are pressed by a plural number of press-clips with an appropriate space.

[9] A vacuum thermal insulating valve as claimed in Claim 1 is so made that  
10 the height of the overlapped part with the combination of the upper and lower vacuum jackets which forms the side wall of the vacuum thermal insulating box is made to be more than 100mm.

[10] A vacuum thermal insulating valve as claimed in Claim 1 is so made that  
the inner wall face of the vacuum thermal insulating spaces of the upper and  
15 lower vacuum jackets undergoes heat treatment after plating.